

# LANSCCE TRAINING

REV 1.0

Rev. Date: March 10, 1998

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## GENERIC PSS/PACS QUALIFICATION PROGRAM

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### Hand Processed Changes

Change No.	Date	Page Numbers	Initials/Group
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### Revision Number 1.0 Reviewed:

_____	Signature on file	_____
L. S. Walker, ESH-1, Team Leader		Date
_____	Signature on file	_____
F. R. Gallegos, LANSCE-6, RSS Engineer		Date

### Revision Number 1.0 Approved:

_____	Signature on file	_____
Melinda Gutierrez, LANSCE-FM, Training Coordinator		Date

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### I. INTRODUCTION

#### OBJECTIVES

- A. The objectives of the Generic PSS/PACS Qualification Program are:
1. To provide a structured and documented method for ensuring that program participants meet the levels of knowledge and practical experience necessary to conduct PSS/PACS Sweeps and Entries at the LANSCE facility.
  2. To provide a program that is in compliance with DoE Order 5480.25, Safety of Accelerator Facilities and the Laboratory Standard LS 113, Laboratory Training Standards. The Laboratory standard ensures compliance with other Laboratory, Federal and State regulations.

#### GOAL

- B. To make the Generic PSS/PACS Qualification Program a program that effectively and efficiently accomplishes its objectives by:
1. formally defining the program.
  2. formally defining the responsibilities of each individual involved.
  3. setting standards of performance.
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### II. Responsibilities

#### A. LANSCE Training Coordinator:

1. will approve the Generic PSS/PACS Qualification Program.
2. will annually evaluate the effectiveness and relevance of the Generic PSS/PACS Qualification Program. This should be accomplished in consultation with the LANSCE-6 RSS Engineer.
4. will assure that the Generic PSS/PACS Qualification Program is properly implemented and complies with applicable orders and standards.
5. will designate, in writing, those people who may serve as OJT Instructors/Evaluators for the Generic PSS/PACS Qualification Program.
6. will maintain the Employee Development System (EDS) documentation for completed training.

#### B. OJT Instructor/Evaluator:

1. will be a certified OJT Instructor/Evaluator.
2. will assure that performance requirements are taught, reviewed and evaluated.
3. will assure that the minimum requirements are met prior to documenting the successful completion of a knowledge or performance requirement by a trainee.
4. will assure that performance requirements are taught, reviewed and evaluated in a safe, responsible and effective manner.

#### C. Trainees:

1. will conscientiously participate in the Generic PSS/PACS Qualification Program.
  2. will strive to achieve the knowledge and/or skill levels, as established in the Qualification Standards, prior to being evaluated by an OJT Instructor/Evaluator.
  3. will actively seek help from OJT Instructors/Evaluators and other personnel as appropriate.
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4. will strive to achieve satisfactory performance in all assigned training.

### D. RSS Engineer:

1. will provide the final evaluation of the trainee's knowledge and understanding of the PSS and PACS systems.
2. will certify the trainees as qualified under this program based upon the final evaluation.

## III. Description

### A. This document contains three parts.

1. The first part (Sections I through IV ) contains a description of the Generic PSS/PACS Qualification program and its implementation.
2. The second part (Section V and VI) contains a list of the various knowledge and performance requirements that the trainee must fulfill to become qualified under the Generic PSS/PACS Qualification Program.
3. The last part contains two signature pages.
  - a. The first signature page, "Knowledge Requirements", documents the trainee's completion of oral evaluations covering each knowledge requirement listed in Section V. The oral evaluations and signature must be accomplished by an OJT Instructor/Evaluator that is qualified under this program.
  - b. The second signature page, "Performance Requirements", documents the trainee's completion of the performance requirements detailed in Section VI. Evaluation of the trainee's performance of the area sweeps and the verification signature must be accomplished by an OJT Instructor/Evaluator that is qualified under this program.

### B. Once the knowledge (V, A through D) and performance requirements for a specific area have been completed, the trainee may perform unsupervised sweeps of that area.

### C. Once all knowledge and performance requirements have been completed and signed off, the trainee will complete an oral

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evaluation with the RSS Engineer. Upon satisfactory completion of this evaluation, the RSS Engineer will certify the trainee as qualified under this program.

D. The Generic PSS/PACS Qualification Program contains two phases: *Initial Qualification* and *Qualification Maintenance*

1. Initial Qualification:

- a. The trainee shall satisfactorily complete all knowledge and performance requirements.
- b. The trainee shall pass the final oral evaluation with the RSS engineer.

2. Qualification Maintenance

- a. Qualification shall remain valid as long as the following conditions are met:
    - i. The PSS/PACS qualified person maintains proficiency at the level required for the position.
      - Generic PSS/PACS Qualification proficiency will expire if 18 calendar months have passed since the qualified person has performed at least one PSS or PACS entry and sweep of any PSS or PACS area.
      - A record of PSS/PACS Sweep and Entry proficiency will be kept by the LANSCE training office.
    - ii. Operator qualification remains valid at the discretion of the LANSCE Training Coordinator in consultation with the LANSCE-6 RSS Engineer.
  - b. If a person's proficiency expires, the LANSCE Training Coordinator in consultation with the LANSCE-6 RSS Engineer will determine the level of retraining required to restore qualification status.
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### IV. Guidelines

#### A. Generic PSS/PACS Qualification

1. The general steps in the conduct of training should be understood by Trainees and OJT Instructors/Evaluators. The following process is recommended,

- a. Training Phase

- i. The trainee is provided with training materials (including instructions in the use of the materials), standards, references, and supporting study material.
- ii. The trainee studies references and material related to one or more training items. The trainee should seek assistance as needed.
- iii. The trainee conducts, discusses, and/or walks through the qualification requirement item(s) with an OJT Instructor/Evaluator. The OJT Instructor/Evaluator corrects knowledge or performance deficiencies noted and helps the trainee learn from his mistakes.
- iv. When confident of having learned the required knowledge and/or skills for the training item(s), the trainee requests an evaluation from an OJT Instructor/Evaluator.

- b. Evaluation Phase

- i. The OJT Instructor/Evaluator and the trainee schedule the evaluation.
  - ii. The OJT Instructor/Evaluator conducts the evaluation using the applicable standards detailed in Section V and VI to evaluate the trainee's knowledge and skill.
  - iii. If the trainee's knowledge and skill are satisfactory, the OJT Instructor/Evaluator documents the successful completion on the appropriate signature page of the trainee's copy of the Generic PSS/PACS Qualification Program . If not satisfactory, the OJT Instructor/Evaluator identifies areas for further study and practice, and directs the trainee to return for
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another evaluation when noted weaknesses have been upgraded.

- iv. After the all knowledge and performance requirements for each area have been signed off by an OJT Instructor/Evaluator, the trainee requests final evaluation from the LANSCE-6 RSS Engineer. Successful completion is documented by the LANSCE-6 RSS Engineer on the trainee's copy of the Qualification Knowledge Requirements page(s) and is surrendered to the LANSCE Training Coordinator for retention.
2. OJT Instructors/Evaluators shall use the standards established in the Knowledge Requirements, during all evaluations.
3. The standards established in the Knowledge Requirements are minimum standards.
4. It is recommended that the trainee complete the knowledge requirements in sequence.
5. The trainee should be adequately prepared prior to requesting an evaluation.
6. Only qualified OJT Instructors/Evaluators may document successful completion of a knowledge requirement by a trainee.

### B. Exceptions

1. Limited exceptions to this qualification process may be granted by the RSS Engineer. Exceptions will be based on prior knowledge and experience with the PSS/PACS systems and Sweep and Entry procedures. At a minimum, the RSS engineer will conduct an evaluation of an exception candidate's knowledge and skill level. The RSS Engineer may certify personnel as qualified in this program under this exception.
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### V. Knowledge Requirements

#### A. Personnel Safety System / Personnel Access Control System philosophy-

The trainee should be able to:

- explain the purpose of the personnel safety and personnel access control systems.
- explain how the personnel safety and personnel access control systems accomplish their purpose.
- explain the administrative controls associated with the personnel safety and personnel access control systems.

#### B. Personnel Safety System / Personnel Access Control System engineering-

The trainee should be able to:

- explain the term "fail safe"
  - explain the term "redundant" as it applies to this PSS/PACS
  - explain the function and operation of the following:
    - reset switches
    - scram switches
    - limit switches
    - kirk key system
    - time delay actuation
    - elevator
    - NIM modules
    - scrams, barriers and exits
    - supervisory system
    - critical circuitry
  - explain the term "configuration control"
  - explain the significance of reset and scram switch locations
  - explain the function, operation and meaning of all signs, horns/sirens and announcements
  - explain the function and operation of the "Administrative Key" release enable.
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### **C. Personnel Safety System / Personnel Access Control System procedures-**

The trainee should be able to:

- explain a general sweep procedure including the reason for each step.
- explain the composition of a sweep team including who is ultimately responsible for insuring a sweep is performed properly.
- explain the actions to be taken if a person refuses to leave an area that is being swept.
- explain a general entry procedure including the reason for each step.

### **D. Individual Personnel Safety Systems / Personnel Access Control Systems-**

The trainee should be able to:

- describe, using a simplified drawing, the design of each individual personnel safety or personnel access control system.
- explain, in detail, the individual entry procedure.
- explain, in detail, the individual sweep procedure.
- describe the hazards associated with an entry
- describe the hazards associated with a sweep

## **VI. Performance Requirements**

### **A. Demonstrate your ability to sweep the listed areas -**

The trainee shall perform two personnel safety / personnel access control system sweeps of each area listed. The first sweep shall be a walk-through with a qualified instructor.

The second sweep shall be an evaluation by a qualified evaluator.

## **VII. Definitions**

*OJT Instructor/Evaluator:* Persons designated by the LANSCE Training Coordinator whom have completed applicable OJT Instructor/Evaluator training and certification.

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### VIII. References

1. TA-53 Facility OJT Standard 53FMP 113-01.0
2. DoE Order 5480.25, Safety of Accelerator Facilities
3. Laboratory Standard 113, Laboratory Training Standards

### IX. Revision History

- 1.0 JANUARY, 22, 1998 Tim Callaway, LANSCE-6, Initial version after draft review.

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### Knowledge Requirements

	Date	Signature
1. PSS / PACS philosophy	_____	_____
2. PSS / PACS engineering	_____	_____
3. PSS / PACS procedures	_____	_____
4. Individual PSS / PACS areas:		
H+ Injector (PSS)	_____	_____
H- Injector (PSS)	_____	_____
Sector A (PACS)	_____	_____
Sector B (PACS)	_____	_____
Sector C-D (PACS)	_____	_____
Sector E-F (PACS)	_____	_____
Sector G-H (PACS)	_____	_____
Switchyard (PACS)	_____	_____
A4 Tunnel (PSS)	_____	_____
Line D North (PACS)	_____	_____
Line D South (PACS)	_____	_____
PSR (PACS)	_____	_____
1L Service Area / Cell (PACS)	_____	_____
1R Blue Room (PACS)	_____	_____
Target 4 Tunnel (PACS)	_____	_____
Line D Fence Area	_____	_____
Exclusion Area system (JB51)	_____	_____
Exclusion Area system (JB52)	_____	_____

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### Performance Requirements

	Date	Signature
1. Demonstrate your ability to sweep the following areas:		
H+ Injector (PSS)	_____	_____
H- Injector (PSS)	_____	_____
Sector A (PACS)	_____	_____
Sector B (PACS)	_____	_____
Sector C-D (PACS)	_____	_____
Sector E-F (PACS)	_____	_____
Sector G-H (PACS)	_____	_____
Switchyard (PACS)	_____	_____
A4 Tunnel (PSS)	_____	_____
Line D North (PACS)	_____	_____
Line D South (PACS)	_____	_____
PSR (PACS)	_____	_____
1L Service Area / Cell (PACS)	_____	_____
1R Blue Room (PACS)	_____	_____
Target 4 Tunnel (PACS)	_____	_____
Typical Line D Fence Area	_____	_____
Exclusion Area system(JB51)	_____	_____
Exclusion Area system(JB52)	_____	_____

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### QUALIFICATION

\_\_\_\_\_

has successfully completed the Generic  
PSS/PACS Qualification Program.

\_\_\_\_\_

Date LANSCE-6 RSS Engineer